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CORNING CABLE SYSTEMS LLC
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EXAMINER

KANG, JULIANA K

ART UNIT PAPER NUMBER

2874

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,523

Applicant(s)

PARRIS ET AL.

Examiner

Juliana K. Kang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/1/05 (RCE).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27, 29-42 and 44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27, 29-42 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The request filed on March 1, 2005 for a Request for Continued Examination (RCE) under 37 CFR 1.114 is acceptable and a RCE has been established. An action on the RCE follows.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-3, 7, 13-19, 22, 26 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Fishlock et al (U.S. Patent 6,466,720 B1).**

Fishlock et al disclose a fiber optic cable (10) comprising: a strength member comprising a sheet (14, extruded sheath made of a medium density polyethylene material which a tensile strength), said sheet having at least one fiber access opening (28) leading to at least one formed area disposed generally longitudinally relative to an axis of the cable; at least one optical fiber component (12) disposed within said at least one formed area so that the at least one optical fiber component (12) can be accessed at the fiber access opening without substantially disturbing the strength member; and a

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cable jacket (30, 32) generally surrounding said strength member with at least a portion of the cable jacket being in communication with the at least one fiber access opening (see Fig. 1). Please note that the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, "said sheet manufactured in a forming process" has not been given patentable weight.

4. Claims 1-3, 7, 8, 11 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Rasanen et al (U.S. Patent 5,319,730).

Rasanen et al disclose a fiber optic cable (8) comprising: a strength member comprising a sheet (7c), said sheet having at least one fiber access opening leading to at least one formed area (2c) disposed generally longitudinally relative to an axis of the cable; at least one optical fiber component (3) disposed within said at least one formed area so that the at least one optical fiber component (12) can be accessed at the fiber access opening without substantially disturbing the strength member; and a cable jacket (1) generally surrounding said strength member with at least a portion of the cable jacket being in communication with the at least one fiber access opening (see Fig. 3). Please note that the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, "said sheet manufactured in a forming process" has not been given patentable weight. The term "in communication" is a broad term and in a broad sense it is believed that the Rasanen et al reference meets the limitation "the cable jacket being in communication with the at least one fiber access opening" since the fiber access opening is in close proximity to the cable jacket.

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Rasanen et al teach that the strength member comprises a metallic material (see column 4 line 19) and an interfacial layer (9).

5. Claims 1, 7-9, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Barnett et al (U.S. Patent 4,846,566).

Barnett et al disclose a fiber optic cable (1) comprising: a strength member comprising a sheet (2), said sheet having at least one fiber access opening leading to at least one formed area (decoupling zone, U-shaped with a generally flat bottom portion compartment 3) disposed generally longitudinally relative to an axis of the cable; at least one optical fiber component disposed within said at least one formed area so that the at least one optical fiber component (7) can be accessed at the fiber access opening without substantially disturbing the strength member; and a cable jacket (9) generally surrounding said strength member with at least a portion of the cable jacket being in communication with the at least one fiber access opening (see Fig. 2). . Please note that the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, "said sheet manufactured in a forming process" has not been given patentable weight.

Regarding claims 2 and 3, Barnett et al disclose the strip of strength member having a substantially uniform thickness (see Fig. 2).

6. Claims 1-3, 6, 7, 9, 11, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Gladenbeck et al (U.S. Patent 4,863,234).

Gladenbeck et al disclose a fiber optic cable (1) comprising: a strength member comprising a sheet (6) made of metal, said sheet having at least one fiber access opening leading to at least one formed area (decoupling zone, U-shaped with a generally flat bottom portion compartment) disposed generally longitudinally relative to an axis of the cable; at least one optical fiber component disposed within said at least one formed area so that the at least one optical fiber component (1) can be accessed at the fiber access opening without substantially disturbing the strength member; and a cable jacket (5) generally surrounding said strength member with at least a portion of the cable jacket being in communication with the at least one fiber access opening (see Fig. 3). Gladenbeck et al's fiber can be accessed through the upper side of U-shaped or V-shaped strength member (support, 6) without substantially disturbing the strength member by reheating. Please note that the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, "said sheet manufactured in a forming process" has not been given patentable weight.

7. Claims 1-5, 7- 9, 11, 13, 14-23, 26, 30 and 31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Heinz et al (WO99/53353).

Regarding claim 1, Heinz et al disclose a fiber optic cable comprising a strength member (IS, an inner strength member) in a tubular shell form having at least one fiber access opening (ISP) leading to a formed area, at least one optical fiber component (LW1..LWn) and a cable jacket (AM) generally surrounding the strength member (IS). Heinz et al's optical fiber *can be* accessed at the fiber access opening without substantially disturbing the strength member. Heinz et al's optical fibers can be access by running a utility knife along the jacket and cutting the jacket and the outer tube without substantially disturbing the strength member (inner strength member). Thus, Heinz et al clearly anticipates the claimed structural limitations. Please note that the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, "said sheet manufactured in a forming process" has not been given patentable weight. The term "in communication" is a broad term and in a broad sense it is believed that the Heinz et al reference meets the limitation "the cable jacket being in communication with the at least one fiber access opening" since the fiber access opening is in close proximity to the cable jacket.

In alternative, Heinz et al teach the claimed invention except for the additional strength member (AS). Since Heinz et al teach taking apart two profiled bodies, it would have been obvious to one having ordinary skill in the art at the time the invention was made to omit the outer strength member (AS) to have easier access to optical fibers.

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Regarding claims 2, 3 and 11, Heinz et al disclose that the strength member is made from a strip-shaped metal foil having a substantially uniform thickness (see page 19 lines 9-20).

Regarding claims 4 and 5, Heinz et al disclose that the strength member's thickness is expediently chosen between 0.1 and 1mm. Heinz et al also teach having different thickness or material for the cable elements. Choosing expedient thickness of cable elements would inherently provide the cable with a non-preferential or preferential bend characteristic depending on the thickness of the cable element chosen.

Regarding claims 7 and 8, Heinz et al show U-shaped with a generally flat bottom portion in Fig. 5.

Regarding claim 9, Heinz et al show a cross-sectional area of the cable being generally non-circular (see Figs. 6 and 7).

Regarding claim 13, Heinz et al disclose that the jacket may be a single-layer or multi-layer structure. Thus, when Heinz et al's jacket is a multi-layer structure, it includes an interfacial layer between the strength member and the outer jacket layer.

Regarding claims 14-16, Heinz et al disclose the fibers placed in a decoupling zone (chamber, KK2 [formed area]) filled with a water-blocking component (FM)(see page 25 lines 10-15).

Regarding claims 17-23, 28, 30, and 31, as described above, Heinz et al disclose the claimed optical fiber cable.

Regarding claim 26, Heinz et al disclose an interstice (gap on the bottom) filled with the jacket material (see Fig. 2).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 10, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinz et al as applied to claims 1 and 17 above, and further in view of Fitz et al (U.S. Patent 6,137,936).**

As described above, Heinz et al disclose the claimed optical cable except indicia. Fitz et al teach an optical fiber cable with a jacket including indicia to make the position of the strength member readily apparent from the external of the cable. Fitz et al further teach that the indicia, preferably, is a ridge or groove on or in a portion of the jacket surface. Heinz et al's cable also includes strength member (ZE1, ZE2, in Fig. 2), thus it would have been obvious to one with ordinary skill in the art at the time the invention was made to use indicia in Heinz et al as taught by Fitz et al to mark the cable elements that are embedded in the cable for easier recognition when it is desired to expose the optical cable elements.

10. **Claims 6, 12, 27, 29 and 32-44 rejected under 35 U.S.C. 103(a) as being unpatentable over Heinz et al.**

Regarding claims 6 and 29, as described above Heinz et al disclose the claimed invention including a U-shaped formed area but is silent about a V-shaped formed area. Using V-shape in place of U-shape in the art is well known

Regarding claims 32-41, 43 and 44, as described above, Heinz et al disclose the claimed optical fiber cable except the strain values of the cable for different tensile forces. Heinz et al teach the strength member material and the thickness that are same or similar to the applicant. For example, Heinz et al's the strength member is made of metallic material and the thickness of the strength member is in the range of 0.1mm and 2mm while applicant's strength member is made of metallic material and the thickness is in the range of 0.25mm and 2mm. Thus, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Heinz et al's strength member thickness or material to obtain any desired strain values including the applicant's claimed strain values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 12, 27 and 42, as described above, Heinz et al teach the claimed invention including a metallic sheet and a cable-filling compound. However, Heinz et al do not explicitly teach a central electrical conductor surrounded by a dielectric material. Heinz et al teach that the cable is used for electrical and/or optical telecommunication cable (see page 20 lines 6-9). Thus, even though Heinz et al do not positively teach an electrical conductor placed in the formed area, it would have been obvious to one with ordinary skill in the art to use an electrical conductor, and to place

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the electrical conductor in the formed area to provide extra protection for the electrical conductor by placing them inside the strength member. Use of a dielectric material would have been also obvious to provide the insulation for the electrical conductor from the metal strength member.

11. Claims 13, 16, 17-19, 22, 23, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett et al as applied to claim 1 and further in view of Consonni (U.S. Patent 6,137,934).

Regarding claim 16, as described above Barnett et al disclose the claimed invention except a water-blocking component disposed in the formed area. Consonni teaches an optical cable having a water-blocking component disposed in a formed area to protect optical fibers from water damage. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a water-blocking component in Barnett et al as taught by Consonni to protect the fiber from water damage.

Regarding claims 13, 17-19, 22, 23, 30 and 31, as described above Barnett et al and Consonni teach the claimed invention except an interfacial layer. Barnett et al teach lapping a tape (9) around the strength member (2) to retain the optical fibers in the formed area. Using an adhesive (thus creating an interfacial layer) when lapping the tape in Barnett et al and Consonni would have been obvious to one having ordinary skill in the art to avoid the tap from getting loose.

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12. Claims 6, 32, 33, and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett et al.

Regarding claim 6, as described above Barnett et al disclose the claimed invention including a U-shaped formed area but is silent about a V-shaped formed area. Using V-shape in place of U-shape in the art is well known

Regarding claim 32, 33, 36-39, as described above Barnett et al disclose the claimed invention except the cable having a strain of about a 1.0% or less when applying about a 1,000 lb. tensile force. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cable to have a strain of about a 1.0% or less when applying about a 1,000 lb. tensile force in Barnett to provide a robust cable and it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

13. Claims 40 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnett et al as applied to claim 32 and further in view of Consonni (U.S. Patent 6,137,934).

Regarding claim 40, as described above Barnett et al disclose the claimed invention except a water-blocking component disposed in the formed area. Consonni teaches an optical cable having a water-blocking component disposed in a formed area to protect optical fibers from water damage. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a water-

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blocking component in Barnett et al as taught by Consonni to protect the fiber from water damage.

Regarding claim 44, as described above Barnett et al and Consonni teach the claimed invention except an interfacial layer. Barnett et al teach lapping a tape (9) around the strength member (2) to retain the optical fibers in the formed area. Using an adhesive (thus creating an interfacial layer) when lapping the tape in Barnett et al and Consonni would have been obvious to one having ordinary skill in the art to avoid the tap from getting loose.

Response to Arguments

14. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (571) 272-2348. The examiner can normally be reached on Mon. & Thur. 10:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JULIANA KANG
PRIMARY EXAMINER